

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended): An etching apparatus for etching a glass substrate comprising:

a first tank including a first etchant;

an etch bath having a bubble plate, the glass substrate immersed in the first etchant and the etch bath connected to the first tank and receiving the first etchant, the etch bath containing a residual etchant including a diluted etchant and residue material after the glass substrate is etched with the first etchant, wherein a thickness of the glass substrate is uniformly reduced;

a second tank receiving the residual etchant from the etch bath and separating the diluted etchant from the residue material;

a connecting passage directly connecting the first and second tanks and directly transferring the separated diluted etchant from the second tank to the first tank;

an outlet pipe attached to the second tank, the outlet pipe discharging the residue material;

a concentration measuring device disposed at the first tank for measuring a concentration of a first etchant in the first tank;

a temperature sensor installed in the etch bath, the temperature sensor measuring and monitoring a temperature of the etchant while the glass substrate is etched in the etch bath based on the to temperature information from the temperature sensor; and

a control unit controlling the first tank, the etch bath and the second tank, the control unit terminating the etching when a temperature of the first etchant reaches a termination temperature,

wherein the first etchant includes a mixed etchant having a etching solution, a water, and the separated diluted etchant from the second tank so that the mixed etchant is supplied to the etch bath and the concentration measuring device measures the concentration of the mixed etchant.

2. (Previously Presented): The etching apparatus according to claim 1, wherein the etch

bath includes a temperature sensor for sensing a target temperature to stop etching the glass substrate.

3. (Original): The etching apparatus according to claim 1, further comprising:

a rinse bath for cleaning the substrate that is etched in the etch bath; and
a dry bath for drying the substrate that is rinsed at the rinse bath.

4. (Original): The etching apparatus according to claim 1, further comprising:

an etching solution source for supplying an etching solution to the first tank; and
a water supply for supplying water to the first tank.

5. (Previously Presented): The etching apparatus according to claim 4, wherein the first tank includes a first amount of the first etchant of a concentration from the etching solution, a second amount of the water, and a third amount of the diluted etchant.

6. (Original): The etching apparatus according to claim 4, wherein the etching solution includes HF solution.

7. (Canceled)

8. (Original): The etching apparatus according to claim 1, further comprising a pump connected to the connection passage for pumping the diluted etchant from the second tank to the first tank.

9. (Previously Presented): The etching apparatus according to claim 1, wherein the outlet pipe is connected to a bottom of the second tank, and the bottom portion of the second tank has a cone shape.

10-26. (Canceled)